



Adding and Subtracting Rational Expressions



Take a minute...

Write out rules for adding fractions with common denominators and different denominators.

$$\frac{1}{8} + \frac{4}{8} = \frac{1+4}{8} = \frac{5}{8}$$

$$\frac{2}{2} \cdot \frac{1}{2} + \frac{1}{4} \quad \frac{1}{2 \cdot 2}$$

Adding or Subtracting Rational Expressions with Different Denominators

**Step 1: Find the LCD of the rational expressions
(HINT: factor each denominator completely)**

**Step 2: Add or subtract numerators, and write the result over the common denominator.
(HINT: if you are SUBTRACTING don't forget to distribute!)**

Step 3: Simplify the resulting rational expression but keep in factored form.

1

$$\frac{u+5v}{8v^2u^2} + \frac{-(u-6v)}{8v^2u^2}$$

2

$$\frac{4a-5}{6a^2+30a} + \frac{a-1}{6a^2+30a}$$

$$\frac{11}{8v^2u^2}$$

1**2**



Follow along with the example to subtract:

$$\frac{4x}{x-2} - \frac{3x}{x-3}$$

PS- write the example and work in your notebook while watching the clip!

3

$$\frac{8}{7v-6} + \frac{4}{3v^2}$$

4

$$\frac{4}{n+7} - \frac{7}{n-2}$$

$$\frac{8}{7v-6} \cdot \frac{3v^2}{3v^2} + \frac{4}{3v^2} \cdot \frac{(7v-6)}{(7v-6)}$$

$$\frac{24v^2 + 28v - 24}{3v^2(7v-6)}$$

3

4

5

$$\frac{4x}{x^2 + 4x - 5} - \frac{5}{4}$$

6

$$\frac{5v}{v-3} + \frac{5}{v+6}$$

5

6